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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,091	09/17/2002	Fang-Chen Luo	5486-US-PA	4158
31561 7590 12/11/2008 JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE 7 FLOOR-1, NO. 100 ROOSEVELT ROAD, SECTION 2 TAIPEI, 100 TAIWAN				
EXAMINER RUDE, TIMOTHY L				
ART UNIT		PAPER NUMBER		
2871				
NOTIFICATION DATE		DELIVERY MODE		
12/11/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USA@JCIPGROUP.COM.TW
Belinda@JCIPGROUP.COM.TW

Office Action Summary

Application No.

10/065,091

Applicant(s)

LUO ET AL.

Examiner

TIMOTHY RUDE

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-33, 44-59 and 62-67 is/are pending in the application.
- 4a) Of the above claim(s) 24-33 and 44-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 56-59 and 62-67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims and Claim Objections

Claims 2, 7, 10, and 11 are canceled by Applicant.amended. Claims 56, 59, and 62 are amended. Claims 63-67 are added.

Objection to claim 62 is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

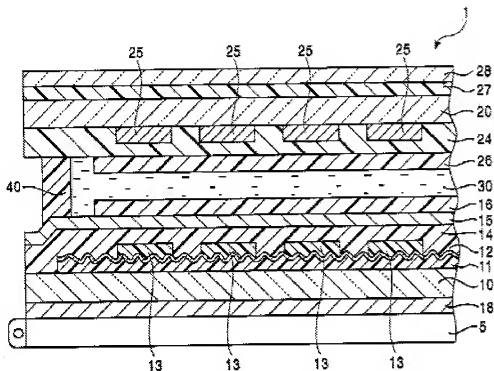
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 56-59, and 62-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada et al., (Tanada), US 2002/0054257 in view of Nakai et al., (Nakai), USPAT 6,144,429.

As to claims 56-58, 62, 63, 65, and 67, Tanada discloses and shows in Fig. 1, a liquid crystal display (LCD) structure comprising a first substrate panel (10) made of glass, a second substrate panel and a liquid crystal layer (30) disposed between the first substrate panel and the second substrate panel, a plurality of pixel portions being formed by respective electrodes for applying a voltage to the liquid crystal layer, each of the pixel portions comprising:

FIG. 1



an organic insulating layer (11) such as photosensitive resin solution, such as acrylic resin (page 3, [0046]) over the first substrate panel (1), wherein the surface of the organic insulating layer has a plurality of protrude/recess structures thereon;

a conformal reflective layer (12) over the organic insulating layer (11), wherein the conformal reflective layer serves as a reflector of light;

a transparent dielectric layer (13 and 14) (color filters with their overcoat layer) over the conformal reflective layer (12), wherein the dielectric layer is a color filter layer (comprising overcoat layer) that has a substantially planar surface (smoother upper surface than the bumpy organic insulating layer); and

a first transparent conductive layer (15) conformably over the transparent dielectric layer (13 comprising 14) which is the color filter layer (comprising overcoat layer), wherein the conformal reflective layer (12) is electrically isolated from the first transparent conductive layer (15).

wherein (Fig. 1) the LCD structure further includes a second transparent conductive layer (25) over the second substrate panel (20) and the liquid crystal layer (30) between the second transparent conductive layer and the first transparent conductive layer.

Tanada does not explicitly disclose that the first conductive layer is connected to the TFT for controlling the liquid crystal layer.

Nakai discloses an LCD device (Fig. 13) having a first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer.

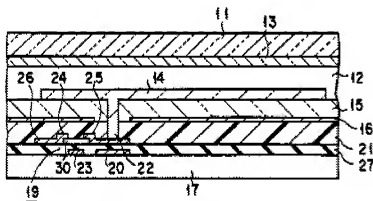


FIG. 13

Nakai is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67). Ultimately, this not only provides improved picture quality (col. 4, lines 65-66), but also provides a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tanada with the first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67) with improved picture quality (col. 4, lines 65-66), resulting in a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

Regarding newly added limitations, the color filter layer comprising overcoat layer of Tanada does completely cover the conformal reflective layer.

Please note, as combined above, the resulting reflective layer covers the second terminal of the TFT, but it exposes the first terminal of the TFT to the color filter via the contact hole. Examiner considers this to read on Applicant's "... first terminal of the thin film transistor is configured in the planar color filter layer while a second terminal of the thin film transistor is configured in the organic insulating layer." (see latter part of Applicant's claim 67).

As to claim 59, Tanada discloses (page 5, [0078]) that his invention is also applicable to a three-terminal type (thin-film transistor: TFT) active matrix liquid crystal display. It is inherent for a thin film transistor to have a gate electrode, a source terminal and a drain terminal.

As to claim 64, Tanada discloses (page 3, [0053]) that the reflective layer (12) is composed of a metallic material having high reflectance, such as Al or Ag.

As to claim 66, Tanada also shows in Fig. 1 that the surface of the second substrate panel on the opposite side of the liquid crystal layer further includes a phase compensation plate (27) and a polarizer (28).

2. Claims 56-59, and 62-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada in view of Ogawa et al (Ogawa) USPAT 6,122,027, and further in view of Nakai,

As to claims 56-58, 62, 63, 65, and 67, Tanada discloses and shows in Fig. 1, a liquid crystal display (LCD) structure comprising a first substrate panel (10) made of glass, a second substrate panel and a liquid crystal layer (30) disposed between the first substrate panel and the second substrate panel, a plurality of pixel portions being formed by respective electrodes for applying a voltage to the liquid crystal layer, each of the pixel portions comprising:

- an organic insulating layer (11) such as photosensitive resin solution, such as acrylic resin (page 3, [0046]) over the first substrate panel (1), wherein the surface of the organic insulating layer has a plurality of protrude/recess structures thereon;

- a conformal reflective layer (12) over the organic insulating layer (11), wherein the conformal reflective layer serves as a reflector of light;

- a transparent dielectric layer (14) (insulating) over the conformal reflective layer (12), wherein the dielectric layer has a substantially planar surface (smoother upper surface than the bumpy organic insulating layer); and

- a first transparent conductive layer (15) over the transparent dielectric layer (14), wherein the conformal reflective layer (12) is electrically isolated from the first transparent conductive layer (15).

wherein (Fig. 1) the transparent dielectric layer (14) includes a color filter layer (13).

wherein (Fig. 1) the LCD structure further includes a second transparent conductive layer (25) over the second substrate panel (20) and the liquid crystal layer (30) between the second transparent conductive layer and the first transparent conductive layer.

Tanada does not explicitly disclose 1) a color filter layer NOT comprising an overcoat layer, and 2) that the first conductive layer is connected to the TFT for controlling the liquid crystal layer.

Ogawa teaches 1) a display having color filters that do not comprise an overcoat layer as an art recognized color filter suitable for the purposes of producing a color display [MPEP 2144.07], wherein the color filter layer fully covers underlying layers.

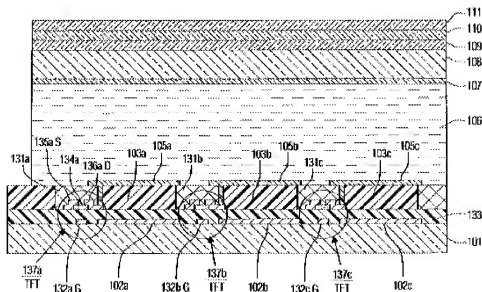


FIG. 8

Ogawa is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add color filters that do not comprise an overcoat layer as an art recognized color filter suitable for the purposes of producing a color display [MPEP 2144.07]. Please note that this proves the overcoat layer of Tanada was known to be NOT essential to such a reflective color filter display, which makes it obvious that the overcoat layer is optional.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tanada with color filters that do not comprise an overcoat layer and fully cover underlying layers as an art recognized color filter suitable for the purposes of producing a color display [MPEP 2144.07].

Nakai teaches 2) an LCD device (Fig. 13) having a first conductive layer (14) connected to the TFT (19) through the contact hole (22, goes through all intervening layers) and source electrode (25) for controlling the liquid crystal layer.

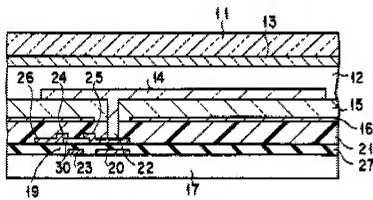


FIG. 13

Nakai is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67). Ultimately, this not only provides improved picture quality (col. 4, lines 65-66), but also provides a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tanada with the first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67) with improved picture quality (col. 4, lines 65-66), resulting in a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

Please note, as combined above, the resulting reflective layer covers the second terminal of the TFT, but it exposes the first terminal of the TFT to the color filter via the

contact hole. Examiner considers this to read on Applicant's "... first terminal of the thin film transistor is configured in the planar color filter layer while a second terminal of the thin film transistor is configured in the organic insulating layer." (see latter part of Applicant's claim 67).

As to claim 59, Tanada discloses (page 5, [0078]) that his invention is also applicable to a three-terminal type (thin-film transistor: TFT) active matrix liquid crystal display. It is inherent for a thin film transistor to have a gate electrode, a source terminal and a drain terminal.

As to claim 64, Tanada discloses (page 3, [0053]) that the reflective layer (12) is composed of a metallic material having high reflectance, such as Al or Ag.

As to claim 66, Tanada also shows in Fig. 1 that the surface of the second substrate panel on the opposite side of the liquid crystal layer further includes a phase compensation plate (27) and a polarizer (28).

Response to Arguments

Applicant's arguments filed on 19 February 2008 have been fully considered but they are not persuasive.

Applicant's ONLY substantive arguments are as follows:

(1) Regarding base claim 56, Tanada in view of Nakai does not teach the claimed color filter fully covering the conformal reflective layer.

(2) Regarding base claim 56, Tanada in view of Ogawa and further in view of Nakai does not teach the claimed color filter fully covering the conformal reflective layer.

(3) An overcoat layer would not be considered obvious for a color filter layer with a non-planar (bumpy) bottom surface.

(4) Dependent claims are allowable because they directly or indirectly depend from an allowable base claim.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that the color filter layer comprising overcoat layer does fully cover all underlying layers, including the conformal reflective layer. Color filter layers in the art have long comprised clear regions (brightness improvement "openings"), planarization portions, and opaque (black mask) regions. In general, "layers" are often composite in nature. It is examiner's duty to give claim limitations all reasonable broad interpretations. Examiner considers the applied prior art color filter layer to quite reasonably read on Applicant's present broad claim limitations.

(2) It is respectfully pointed out that the color filter layer of Ogawa is contiguous (though multi-colored, as is Applicant's layer) and it does fully cover all underlying layers, including the conformal reflective layer(s).

(3) It is respectfully pointed out that an overcoat layer would be considered obvious for a color filter layer with a planar (non-bumpy) top surface of applied Tanada

(see planar top surfaces of 13 in Figure 1 of Tanada). In fact, all applied prior art references have planar top surfaces. It has long been well known in the art that color filters planarize (form planar top surfaces despite non-planar bottom surface); deliberate process steps are needed to *force* such surfaces to be non-planar. Examiner has considered Applicant's arguments and maintains all rejections of Applicant's present broad claim limitations are proper.

(4) It is respectfully pointed out that in so far as Applicant has not argued rejection(s) of the limitations of dependent claim(s), Applicant has acquiesced said rejection(s).

References cited but not applied are relevant to the instant Application.

Conclusion

Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2871

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY RUDE whose telephone number is (571)272-2301. The examiner can normally be reached on Increased Flex Time Program.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nelms C. David can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

tlr

/TIMOTHY RUDE/

Primary Examiner, Art Unit 2871